



Managed by Fermi Research Alliance, LLC for the U.S. Department of Energy Office of Science

FRA's Earned Value Management System Overview

Richard Marcum, FNAL Project Controls Manager

EVMS Surveillance Review

10 December, 2014

Outline

- **FRA EVMS Documents**
 - Procedure Updates
 - Desktop Instructions
- **FRA EVMS Process**
- **CAM and PM EVMS Training**
- **Improvement Opportunities**

FRA EVMS Documents

- **EVMS Documents**

- FRA Earned Value Management System Description
- 12.PM-001 Project WBS, OBS, RAM
- 12.PM-002 Control Accounts, Work Packages, Planning Packages
- 12.PM-003 Work Authorization
- 12.PM-004 Project Scheduling
- 12.PM-005 Cost Estimating
- 12.PM-006 Monthly Status Reporting
- 12.PM-007 Change Control
- 12.PM-008 EVMS Surveillance & Maintenance



- <http://www.fnal.gov/directorate/OPMO/PolProc/home.htm>

- **Ownership**

- Office of Project Support Services (OPSS) - responsible for implementing and maintaining the FRA Earned Value Management System, including maintaining the interfaces with existing Fermilab business and management systems

FRA EVMS Documents - Policies and Procedure Updates

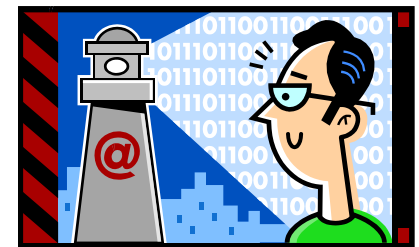
- **FRA Earned Value Management System Description**
 - Clarification on Recommended Methodology for Earning Value with Uncosted Labor
 - Removed Reference to Contract Budget Baseline
 - Acronym of CR to BCR for Clarity and Consistency
 - Clarified Project Manager Reporting Hierarchy
 - Formatting
- **12.PM-002 Control Accounts, Work Packages, and Planning Packages**
 - Clarification to Planning Package Conversion
 - Updated Requirement to track Uncosted Labor hours to Match EVMS Description
 - Updated WAD Example

FRA EVMS Docs – Policies and Procedure Updates (Cont.)

- **12.PM-003 Work Authorization**
 - Updated WAD Example
- **12.PM-007 Change Control**
 - Added Responsibilities of Change Control Board (CCB)
 - Added Responsibility of CCB/PM Notification of CAM
 - Clarification of Administrative Change
 - Clarification of BCR timing
 - CR/BCR Acronym Update for Consistency

FRA EVMS Documents – Desktop Instruction

- **Added new Desktop Instructions**
 - EVM Summary Guidance
 - Clarification of Contingency, MR, and UB
 - PMT Guidance and Clarification
 - Rate Changes Guidance
 - Sale of Special Process Spares
 - Schedule Peer Review Checklist
 - VAR Preparation
 - Understanding and Using a Schedule
- **Guidance**
 - PM, CAM, and PCS
 - Promote Consistent Adherence
 - Not official Auditable System



FRA EVMS Process – ANSI/EIA-748B Compliant

- **Consistent with ANSI/EIA-748B Standard for Earned Value Management Systems**
 - Organization
 - Planning, Scheduling and Budgeting
 - Accounting Considerations
 - Analysis and Management Reports
 - Revisions and Data Maintenance
- **Crosswalk between ANSI/EIA748B and the System Description / Implementing Procedures is in Appendix A of System Description**

FRA EVMS Process – ANSI/EIA-748B Compliant (Cont.)

8. APPENDIX A-ANSI/EIA-748-B GUIDELINE CROSSWALK

ANSI/EIA-748-B Guidelines	FRA Earned Value Management System (EVMS) Implementation
Organization	
Guideline 1: Define the authorized work elements for the program. A Work Breakdown Structure (WBS), tailored for effective internal management control, is commonly used in this process.	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 2.1- Work Breakdown Structure Procedures: 12.PM-001 Project WBS, OBS, RAM
Guideline 2: Identify the program organizational structure including the major subcontractors responsible for accomplishing the authorized work, and define the organizational elements in which work will be planned and controlled.	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 2.3.1- Organizational Breakdown Structure Section 2.4- Project Execution Plan Section 2.5- Responsibility Assignment Matrix Procedures: 12.PM-001 Project WBS, OBS, RAM
Guideline 3: Provide for the integration of the company's planning, scheduling, budgeting, work authorization and cost accumulation processes with each other, and as appropriate, the program work breakdown structure and the program organizational structure.	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 2.1- Work Breakdown Structure Section 2.3.1- Organizational Breakdown Structure Section 2.5- Responsibility Assignment Matrix Section 3.1- Baseline Development Process Section 3.4- Planning and Baseline Scheduling Section 3.7- Work Authorization Procedures: 12.PM-001 Project WBS, OBS, RAM
Guideline 4: Identify the company organization or function responsible for controlling overhead (indirect costs).	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 4.2- Indirect Cost Planning and Control
Guideline 5: Provide for integration of the program work breakdown structure and the program organizational structure in a manner that permits cost and schedule performance measurement by elements of either or both structures, as needed.	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 2.1- Work Breakdown Structure Section 2.3.1- Organizational Breakdown Structure Section 2.5- Responsibility Assignment Matrix Section 3.1- Baseline Development Process Section 3.4- Planning and Baseline Scheduling Procedures: 12.PM-001 Project WBS, OBS, RAM 12.PM-002 Control Accounts, Work Packages, Planning Packages
Planning, Scheduling, and Budgeting	
Guideline 6: Schedule the authorized work in a manner, which describes the sequence of work	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 2.3.1- Organizational Breakdown Structure

ANSI/EIA-748-B Guidelines	FRA Earned Value Management System (EVMS) Implementation
and identifies significant task interdependencies required to meet the requirements of the program.	<ul style="list-style-type: none"> Section 3.2- Risk Management Section 3.3- Technical Baseline Section 3.4- Planning and Baseline Scheduling Section 3.7- Work Authorization Procedures: 12.PM-003 Work Authorization 12.PM-004 Project Scheduling
Guideline 7: Identify physical products, milestones, technical performance goals, or other indicators that will be used to measure progress.	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 3.3- Technical Baseline Section 3.4- Planning and Baseline Scheduling Section 5.1- Performance Measurement Procedures: 12.PM-004 Project Scheduling
Guideline 8: Establish and maintain a time-phased budget baseline, at the Control Account level, against which program performance can be measured. Budget for far-term efforts may be held in higher-level accounts until an appropriate time for allocation at the Control Account level. Initial budgets established for performance measurement will be based on either internal management goals or the external customer negotiated target cost including estimates for authorized but <u>undefinitized</u> work. On government contracts, if an over target baseline is used for performance measurement reporting purposes; prior notification must be provided to the customer.	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 3.4- Planning and Baseline Schedule Section 3.5- Cost Estimating and Baseline Budget Section 3.7- Work Authorization Procedures: 12.PM-002 Control Accounts, Work Packages, Planning Packages 12.PM-005 Cost Estimating
Guideline 9: Establish budgets for authorized work with identification of significant cost elements (labor, material, etc.) as needed for internal management and for control of subcontractors.	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 2.3.1- Organizational Breakdown Structure Section 2.5- Responsibility Assignment Matrix Section Section 3.5- Cost Estimating and Baseline Budget Section 3.8- Subcontractor and Collaborator Planning Procedures: 12.PM-005 - Cost Estimating
Guideline 10: To the extent it is practical to identify the authorized work in discrete Work Packages, establish budgets for this work in terms of dollars, hours, or other measurable units. Where the entire Control Account is not subdivided into Work Packages, identify the far term effort in larger Planning Packages for budget and scheduling purposes.	EVMS Systems Description Document – <ul style="list-style-type: none"> Section 2.3- Organizational Responsibility Section 3.4- Planning and Baseline Scheduling Section 3.5 Error! Reference source not found.- Cost Estimating and Baseline Budget Procedures: 12.PM-002 - Control Accounts, Work Packages, Planning Packages

FRA EVMS Process –Planning, Scheduling & Budget (Cont.)

- **Collaboration Efforts Utilize**
 - Statement of Work (SOW) for each Fiscal Year detailing Expectations Covered by Fermilab
 - Work Scope
 - Resources
 - Costs
 - Executed through Procurement Process
 - Purchase Requisition
 - Purchase Order

FRA EVMS Process – Accounting Considerations

- **Fermilab's Oracle eBS** (electronic Business Suite)
 - Collect Actual Costs
 - Accruals
 - Automatic for Material Received at Fermilab
 - Manual for Services & Materials Received Elsewhere
 - Indirects are applied
 - Rates set at Least Annually by CFO
 - Adjusted at Fiscal Year End to reflect Actual Indirect Costs at Fermilab
 - May be Adjusted at Interim Dates
 - Opportunities for Pass-through Rates
 - Cap for Large Qualified Purchase Orders at \$500K

FRA EVMS Process – Accounting Considerations (Cont.)

	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Labor	2.9%	3.0%	3.2%	3.3%	3.4%	3.5%	3.6%
M&S	1.7%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%

- Labor and M&S rates from Fermilab Budget Office
 - Use information from the Congressional Budget Office (CBO) annual pricing forecast done each February
 - CFO and Budget office interpret trends in prices and normalize for lab expectations and DOE funding constraints
- Used by FNALs Cost Processor (Cobra) to Develop BCWS Cost Estimation

FRA EVMS Process – Accounting Considerations (Cont.)

- **Kronos used for Fermilab Labor**
- **Labor at other Institutions**
 - M&S to Fermilab Managers
 - Scheduled as “Labor” in Primavera P6
- **Interface with Cobra**
 - Actual Costs and Hours are Extracted from eBS
 - Loaded into Cobra Monthly (See Graphic on Monthly Status Reporting Cycle)
 - Cobra and eBS Totals are Reconciled

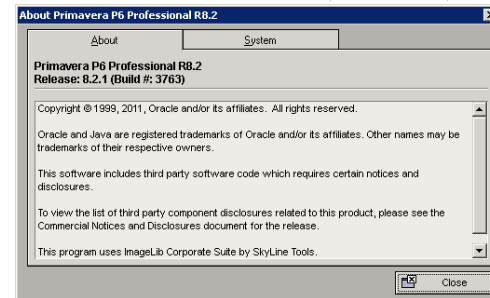
FRA EVMS Process – Primary Tools

- **Accounting**

- Oracle's e-Business Suite - Project Costing Module – aka Project Accounting (PA)

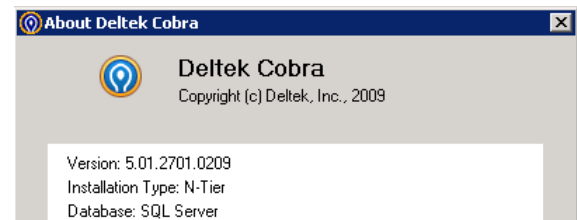
- **Scheduling**

- Primavera P6 (v8.2)

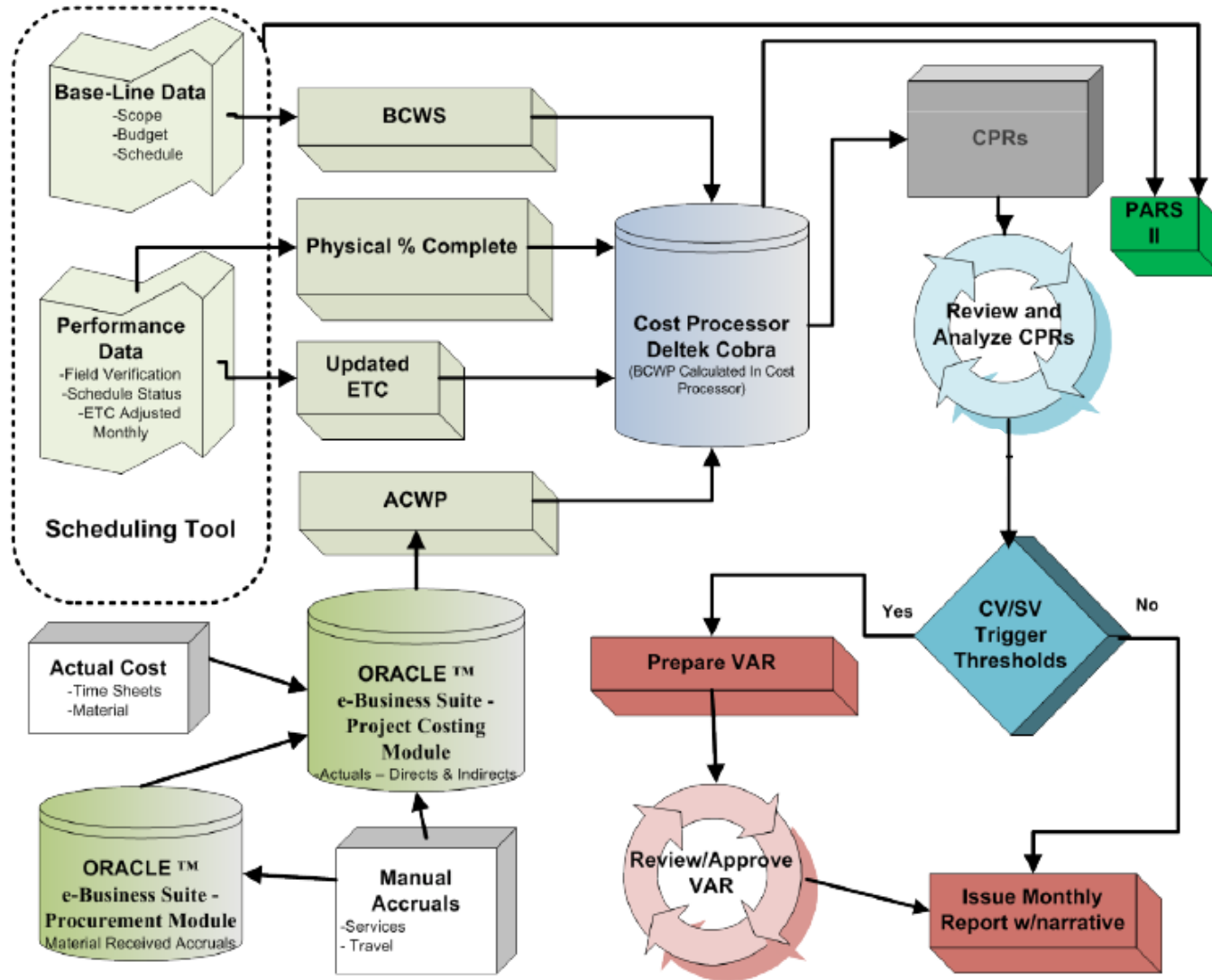


- **EV Cost Processor**

- Deltek Cobra (v5.1)



FRA EVMS Process –Analysis & Management Reporting

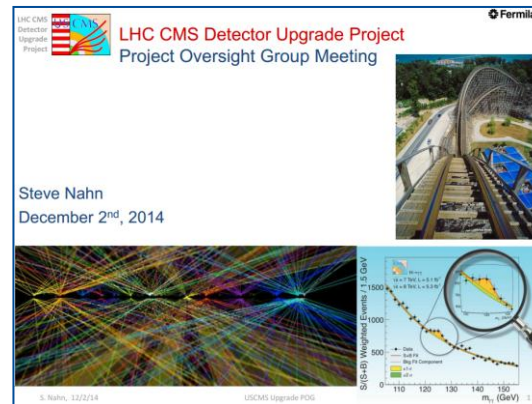



FRA EVMS Process—Analysis & Management Reporting (Cont.)

- **FRA Management**

- Involved and Supportive of Projects
- Monitor Project Performance including EV data from:
 - Project Monthly Reports
 - Monthly Project Management Group (PMG) Meetings
 - Performance Oversight Group (POG) Meetings
 - FRA Director's Reviews prior to DOE's Office of Project Assessment review and Critical Decisions


Performance Oversight Group (POG) Meeting		
December 2, 2014, 8:30 – 10:30 AM		
Comitium (WH25E)		
Agenda		
ReadyTalk Dial-In U.S. & Canada - 866-740-1260, Access Code: 1064796		
8:30 Convene/Review Agenda	N. Lockyer/E. Gottschalk	
8:35 Project Status Summary Review	E. Gottschalk	
8:40 Special Reports		
8:40 UUP DOE Review Readiness (15 min)	R. Alber	
8:55 EVMS Surveillance Review (10 min)	M. Kaducak	
Post CD-1		
9:05 Mu2e (10 min)	R. Ray	
9:15 LCLS II (10 min)	R. Stanek	
9:25 LBNF (10 min)	E. McCluskey	
9:35 Muon g-2 (10 min)	C. Polly	
Post CD-3		
9:45 CMS Upgrade (10 min)	S. Nahn	
9:55 MicroBooNE (10 min)	R. Rameika	
AIP/GPP		
10:00 Muon campus AIP/GPP (10 min)	M. Convery	
10:10 Update on Future Director's and DOE Reviews	M. Kaducak	
10:15 Action Item Review	E. Gottschalk	
10:20 Meeting Summary/	E. Gottschalk	
Management Concluding Comments	N. Lockyer	
10:25 Adjourn		





Mu2e POG Presentation

Ron Ray
Mu2e Project Manager
12/2/2014



FRA EVMS Process – ETC/EAC (Cont.)

- **Both Projects are in Early Stages**
 - Mostly EAC equals BAC
 - However, CAMs are Still Required to Ensure the EAC Reflects a Valid Projection of Project Costs
- **At Least Monthly CAMs:**
 - Review the CAs for Expended Effort vs Baseline
 - Assess Achievability of the Remaining Plan
 - Assess any Unforeseen Effort or Cost Not in Plan
 - Forecast Remaining Work using All Available Information to arrive at the best possible EAC.
 - Specifying remaining quantities/costs on each lowest-level activity.

FRA EVMS Process – ETC/EAC (Cont.)

- **Significant Future Impact to the ETC Require CAMs:**
 - Inform PM of Issues
 - Receive Preliminary Direction
 - CAMs May look for Corrective Actions
 - CAMs May Submit Changes (BCR) for Approval and Initiate Process with Subsequent Incorporation into the working/forecast schedule and Cobra by Project Controls.
- **ETC changes May also be Initiated by the Project Manager.**
- **At least Annually, the PM will request that all CAMs**
 - Review their ETC
 - Submit a Detailed, Bottoms-up Estimate for the Remaining Work
 - Establish a New EAC

FRA EVMS Process – Variance Thresholds (with Hours)

Variance Analysis Thresholds for Control Accounts		
Green Thresholds – Cost and Schedule Performance falling outside of yellow or red thresholds		
Yellow Thresholds		
Cost Variance Schedule Variance	Type	Threshold limit
Dollars	Current Period	$\geq \pm 5\%$ to $< \pm 10\%$ and $\geq \$50K$
	Cumulative	$\geq \pm 5\%$ to $< \pm 10\%$ and $\geq \$100K$
Hours	Current Period	$\geq \pm 5\%$ to $< \pm 10\%$ and ≥ 350 hrs
	Cumulative	$\geq \pm 5\%$ to $< \pm 10\%$ and ≥ 700 hrs
Red Thresholds		
Cost Variance Schedule Variance	Type	Threshold limit
Dollars	Current Period	$\geq \pm 10\%$ and $\geq \$100K$
	Cumulative	$\geq \pm 10\%$ and $\geq \$200K$
Hours	Current Period	$\geq \pm 10\%$ and ≥ 700 hrs
	Cumulative	$\geq \pm 10\%$ and ≥ 1400 hrs

Note: This applies to SV% (Schedule Variance in %) or CV% (Cost Variance in %) and the SV or CV in \$ or hours.

FRA EVMS Process – VAR Threshold Determination

- **VAR Thresholds Found in 12-PM-006**
 - Default Thresholds for all Projects
 - Can be Modified based on Specific Project Requirements
- **If VAR Thresholds need to be Tailored**
 - Project Presents Need to the PMG for Approval
 - Adds to the Project's PMP.
- **Mu2e and CMS are using default Thresholds**

FRA EVMS Process – Revisions and Data Maintenance

- **Changes Only on Future Work**, not to change past performance
- **Change Control Thresholds are Project Specific**
 - High level Thresholds (DOE's) are Identified in the Project Execution Plan (PEP).
 - Lower level Thresholds (FRA's) are Identified in the Project Management Plan (PMP)
- Example

	DOE THRESHOLDS				FRA THRESHOLDS		
	Secretarial Acquisition Executive (Level 0-A) Deputy Secretary	Acquisition Executive (Level 0-B) SC-1	Associate Director OHEP (Level 1)	DOE NOvA Federal Project Director (Level 2)	Fermilab Associate Director (Level 3)	NOvA Project Manager (Level 4)	Subproject Manager (Level 5)
Technical	A change in scope that affects the ability to meet a Key Performance Parameter (KPP) and the ability to satisfy the mission need.	A change in scope that affects the ability to meet a KPP and the ability to satisfy the mission need.	Any change in the KPPs as referenced in PEP section 3.2.	Any significant change to the technical scope (as described in PEP sect. 5) that affect ES&H requirements or meeting Project Closeout definitions in PEP Table 7.2.	Major technical changes that are significant departures from the technical baseline. Changes that affect ES&H or impact PoT projections by more than 10%. Out-of-scope changes to upgrade physics capabilities.	Related technical changes to multiple subprojects that do not diminish performance	Minor technical changes to a single subproject that does not diminish performance
Schedule	≥ 6 months (cumulative) delay in the CD-4 completion date.	a 3 to 6 months (cumulative) delay in the CD-4 project completion date.	Any change to a level 1 milestone > 3 months, or up to a 3 month delay in CD-4 project completion date.	Any change to a Level 2 milestone > 1 month or a Level 1 milestone < 3 months.	Any change that results in the delay of a Level 3 Director's milestone.	Any change that results in the delay of a Level 4 milestone by more than one month.	Any change that results in the delay of a Level 5 milestone by more than one month
Cost	Increase in excess of \$25M or 25% (cumulative) of the CD-2 Total Project Cost baseline.	Any increase in the CD-2 Total Project Cost baseline.	Any change in Total Estimated Cost or Total Project Cost.	Any cumulative use of contingency of > \$1M.	Increase in the cost of a single item by more than \$250k. Increase in the Project base cost exceeding \$500k during the previous 12 months.	Increase in the cost of a single item by more than \$100k.	Increase in the cost of a single item by more than \$25k.

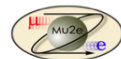
FRA EVMS Process – Revisions and Data Maintenance

- **Contingency Established**
 - Estimate Uncertainty
 - Statistical Evaluation of Risks (PRA)
 - Controlled By DOE
- **Management Reserve**
 - Allowed by DOE field Office
 - Limit as Defined by PEP
 - Reduced by BCRs
- **Undistributed Budget**
 - Draws from MR/Contingency
 - Field Changes
 - BCRs



FRA EVMS Process – Revisions & Data Maintenance (Cont.)

- **Changes must be Documented and Approved**
 - Work Authorizations are Updated after Baseline Changes
 - Change logs are used to Track and Report
 - Change History
 - Management Reserve
 - Contingency
- **Example**



Mu2e Change Request Log

updated

12/1/14

CR#	WBS	Description of change	Date Submitted	Level	Cost Impact	Schedule Impact	Approval Status	DocDB
1	475.03	changes to remote target handling control room	8/20/13	4	\$ 95,489	none	approved	4412
2	475.0	Establish internal baseline and incorporate recommendations from Director's Review.	8/8/14	4	\$ 361,274	9 days	approved	4448
3	475.0	New rate adjustments for labor fringe and overhead.	8/20/14	4	\$ (21,550)	none	approved	4473
4	475.0	Cost leveling; new CD-3c strategy	10/2/14	4	\$ 500,080	-7 days	approved	4599
5	475.0	Resource/Code corrections	10/29/14	4	\$ (42,430)	none	approved	4705
6	475.0	Corrections made to CR002	11/7/14	4	\$ (172,650)	none	approved	4731
7	475.0	Changes due to DOE Review recommendations	11/12/14	3	\$ 78,083	none	submitted	4736
8	475.0	Rate changes	11/13/14	4	\$ (2,011,495)	none	submitted	4749
9	475.0	Include central ES&H support	11/21/14	4	\$ 520,550	none	submitted	4837

Total cost of changes \$ (692,649)

Original Baseline Contingency

\$ 52,721,812

Changes

\$ (692,649)

Remaining Contingency

\$ 53,414,461

FRA EVMS – Training

For Key Project Individuals Including

- Project Manager
- Sub/Deputy Project Managers
- CAMs
- PCS
- Financial Controllers

Types of Training

- 3 Day Training
- Boot Camp Refresher
- Focused Training Modules
- One on One Mentoring

EVMS Training

Date	FINAL ID	Name of Attendee	Project	Topic	Duration	Instructor
9/5/2014	13131N	Suzanne Saxer	OPSS	EVM Responsibilities & Fundamentals PMB Review - Principles and Questions	1 hr.	Richard Marcum
9/5/2014	12699N	Russ Alber	UUP	EVM Responsibilities & Fundamentals PMB Review - Principles and Questions	1 hr.	Richard Marcum
9/5/2014	6779	Chuck Federowicz	UUP	EVM Responsibilities & Fundamentals PMB Review - Principles and Questions	1 hr.	Richard Marcum
9/5/2014	15321N	Randy Wielgos	UUP	EVM Responsibilities & Fundamentals PMB Review - Principles and Questions	1 hr.	Richard Marcum
9/5/2014	11220N	Jolie Macier	UUP	EVM Responsibilities & Fundamentals PMB Review - Principles and Questions	1 hr.	Richard Marcum
9/5/2014	15287N	Jonathan Hunt	UUP	EVM Responsibilities & Fundamentals PMB Review - Principles and Questions	1 hr.	Richard Marcum
9/11/2014	13131N	Suzanne Saxer	OPSS	Developing the Schedule	1 hr.	Richard Marcum
9/11/2014	12699N	Russ Alber	UUP	Developing the Schedule	1 hr.	Richard Marcum
9/11/2014	6779	Chuck Federowicz	UUP	Developing the Schedule	1 hr.	Richard Marcum
9/11/2014	15321N	Randy Wielgos	UUP	Developing the Schedule	1 hr.	Richard Marcum
9/11/2014	11220N	Jolie Macier	UUP	Developing the Schedule	1 hr.	Richard Marcum
9/11/2014	15287N	Jonathan Hunt	UUP	Developing the Schedule	1 hr.	Richard Marcum
9/11/2014	16368N	Lisa Temple	OPSS	Developing the Schedule	1 hr.	Richard Marcum
9/19/2014	12699N	Russ Alber	UUP	Refine & Evaluate the Schedule	1 hr.	Richard Marcum
9/19/2014	6779	Chuck Federowicz	UUP	Refine & Evaluate the Schedule	1 hr.	Richard Marcum
9/19/2014	15321N	Randy Wielgos	UUP	Refine & Evaluate the Schedule	1 hr.	Richard Marcum
9/19/2014	11220N	Jolie Macier	UUP	Refine & Evaluate the Schedule	1 hr.	Richard Marcum
9/19/2014	15287N	Jonathan Hunt	UUP	Refine & Evaluate the Schedule	1 hr.	Richard Marcum
9/19/2014	14650N	Cary Yoshikawa	g-2	Refine & Evaluate the Schedule	1 hr.	Richard Marcum
9/26/2014	13131N	Suzanne Saxer	OPSS	Estimate Development	1 hr.	Richard Marcum
9/26/2014	6779	Chuck Federowicz	UUP	Estimate Development	1 hr.	Richard Marcum
9/26/2014	15321N	Randy Wielgos	UUP	Estimate Development	1 hr.	Richard Marcum
9/26/2014	11220N	Jolie Macier	UUP	Estimate Development	1 hr.	Richard Marcum
9/26/2014	15287N	Jonathan Hunt	UUP	Estimate Development	1 hr.	Richard Marcum
10/3/2014	12699N	Russ Alber	UUP	Monthly Status	1 hr.	Richard Marcum
10/3/2014	6779	Chuck Federowicz	UUP	Monthly Status	1 hr.	Richard Marcum
10/3/2014	15321N	Randy Wielgos	UUP	Monthly Status	1 hr.	Richard Marcum
10/3/2014	11220N	Jolie Macier	UUP	Monthly Status	1 hr.	Richard Marcum
10/3/2014	15287N	Jonathan Hunt	UUP	Monthly Status	1 hr.	Richard Marcum
10/3/2014	16368N	Lisa Temple	OPSS	Monthly Status	1 hr.	Richard Marcum
10/15/2014	6859	Elaine McCluskey	LBNE	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	5374	Rick Coleman	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	8689	Steve Werkema	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	9496	Henry Glass	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	16350N	Christopher Jacobsen	Finance	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	8689	Dean Still	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	12699N	Russ Alber	UUP	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	15287N	Jonathan Hunt	UUP	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	15321N	Randy Wielgos	UUP	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	11269C	Adam Helander	Proj Ctrls	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	14858	Vadim Rusu	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	3530	Robert Wagner	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	4451	Rodger Bossert	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	13469	Vladimir Nagaslaev	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	5760	Mark Bowden	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	15214N	Halley Brown	PCS	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	09480C	David Leeb	PCS	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	15870N	Mike Gardner	PCS	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	7837	Jeff Brandt	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	16301	Fran Leavell	OPSS	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	14877N	George Ginter	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	15651	Bob O'Sullivan	LBNE	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	10356	Julie Whitmore	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum
10/15/2014	3438	Tony Leveling	Mu2e	EVM VAR Training*	1 hr.	Richard Marcum

FRA EVMS – Improvement Opportunities

Continual Training

- Developing More Focused EVMS Training
- Tool Training such as P6 for CAM
- Enhance Training Tracking

Tool Enhancements

- eCAM Notebook
- Process Simplification/Automation
 - Acumen
 - Templates

Templates / Guidance

- PMII Directive
- OPSS Focus

Version 5.1.1.0 x64

This product is licensed to:
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//FUSE //RISK //360